

REMARKS

Claims 1-35 are pending. Claims 1, 18, 26, and 27 have been amended for clarity and to correct minor typographical errors only. Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Claims Rejections Under 35 U.S.C. § 103

A. Claims 1-3 and 6 were rejected under 35 U.S.C. § 102(e) over Ohuchi et al. (U.S. Patent No. 6,576,562). Applicants respectfully traverse this rejection.

Claim 1, recites, in part, a method for fabricating a semiconductor device including etching an etch target layer by using a sacrificial hard mask and a hard mask as an etch mask to form the line pattern. In contrast, Ohuchi discloses that that after etching of the object 104 is terminated, the mask material pattern 105 is removed by using an ashing device (See, for example, column 17, lines 14-17 and column 19, lines 59-61). After the pattern 105 is removed, the polysilicon film 103 is etched with gas (See, for example, column 19, lines 62-65). Therefore, Ohuchi teaches that the mask material pattern 105 is removed before the etch target layer and therefore is not used as part of the etch mask for etching the etch target layer. Accordingly, Ohuchi fails to teach a method for fabricating a semiconductor device including etching an etch target layer by using a sacrificial hard mask and a hard mask as an etch mask to form the line pattern, as recited in claim 1.

Claims 2 and 3 are believed allowable for at least the reasons present above with respect to claim 1 by virtue of their dependence upon claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

B. Claims 1, 2, 6, 7-9, 13, 15, 18, and 22-24 were rejected under 35 U.S.C. § 102(e) over Chan et al. (U.S. 6,764,903). Applicants respectfully traverse this rejection at least because Chan is not a valid prior art reference.

Chan does not qualify as prior art under any section of 35 U.S.C. § 102 since Chan's filing date of April 30, 2003 is after Applicants earliest priority date of April 4, 2003. To perfect Applicants' claim of foreign priority, Applicants submit herewith an English language translation of the certified priority document which is verified to be accurate. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

C. Claims 1, 2, 6, and 9 were rejected under 35 U.S.C. § 102(e) over Huang et al. (U.S. Patent No. 6,171,940). Applicants respectfully traverse this rejection.

Claim 1 recites, in part, a method for fabricating a semiconductor device that includes forming a hard mask insulation layer and a hard mask sacrificial layer on the hard mask insulation layer and etching the etch target layer using the sacrificial hard mask and the hard mask as an etch mask to form a line pattern. In contrast, Huang discloses a polysilicon layer 30 with an organic layer 40 on the silicon layer 30. Huang further discloses an anti-reflection layer 50 that is formed on the organic layer 40 and a photoresist layer 60 that is formed on the reflection layer 50 (See, for example, column 2, lines 55-65). Furthermore, Huang discloses that the photoresist layer 60 and the anti-reflection layer 50 act as a mask for defining the size of the gate electrode. The Office Action asserts that the reflective layer 50 is analogous to the hard mask sacrificial layer of Applicants invention. Applicants respectfully disagree.

As disclosed in Applicants specification, the hard mask sacrificial layer and the anti-reflective layer are different layers (See, for example, page 13, lines 15-25). Therefore, since Huang is silent regarding a hard mask sacrificial layer, Huang does not disclose a hard mask sacrificial layer. Accordingly, Huang fails to teach a method for fabricating a semiconductor device that includes forming a hard mask insulation layer and a hard mask sacrificial layer on the hard mask insulation layer and etching the etch target layer using the sacrificial hard mask and the hard mask as an etch mask to form a line pattern, as recited in claim 1.

Claims 2 and 9 are believed allowable for at least the reasons present above with respect to claim 1 by virtue of their dependence upon claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

Claims Rejections Under 35 U.S.C. § 103

Claims 3, 5-14, 17-19, 21-28, and 30-35 were rejected under 35 U.S.C. § 103(a) Huang or Chan in view of Aminpur et al. (U.S. Patent No. 6,482,726), Ohuchi, Nallan et al. (U.S. Patent No. 6,440,870) and Blossie (U.S. Patent No. 6,682,996). Applicants respectfully traverse this rejection.

Claim 26 is believed allowable for at least the same reasons presented above with respect to claim 1 since claim 26 recites, in part, a method for fabricating a semiconductor device including etching a conductive layer by using a sacrificial hard mask a the hard mask as an etch mask to form a line type conductive pattern. As established above, Huang fails to teach or suggest such a feature and Chan is not valid prior art.

Claims 27, 28, and 31-35 are believed allowable for at least the same reasons present above with respect to claim 26 by virtue of their dependence upon claim 26.

Claims 1, 3, 5, 7-14, 17-19, and 21-25 are believed allowable for at least the same reasons presented above because, as discussed above, neither Huang or Chan teaches or suggests at least the subject matter of claims 1 and 18 and because no combination of Aminpur, Ohuchi, Nallan, and Blosser remedies the deficiencies of Huang or Chan. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

Allowable Subject Matter


Applicants appreciate the Examiner's indication that claims 4, 15, 16, 20, and 29 contain allowable subject matter and would be allowable if rewritten in independent format to include all of the features of their respective intervening claims. However, in view of the foregoing, all of the claims (1-35) are believed to be allowable.

Conclusion

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,
MAYER BROWN ROWE & MAW LLP

By: 
Yoon S. Ham
Registration No. 45,307
Direct No. (202) 263-3280

YSH/VVK
Intellectual Property Group
1909 K Street, N.W.
Washington, D.C. 20006-1101
(202) 263-3000 Telephone
(202) 263-3300 Facsimile

Date: January 21, 2005